

# Some additions to our knowledge of the Plants of Ramtek (Maharashtra)

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In the present communication about 112 species are reported from Ramtek as an addition to the list by Graham in 1912. The families Nymphaeaceae, Linaceae, Loganiaceae, Nyctaginaceae, Alismaceae, Eriocaulaceae and Cyperaceae are here recorded for the first time. The species listed here are accompanied by additional notes and have been grouped as 1. Aquatic and semiaquatic, 2. Weeds, 3. Introduced plants. Each species is provided with short descriptive notes, locality and collection number.

## INTRODUCTION

The town of Ramtek, the headquarters of the tehsil bearing the name, is situated at 21° 24' N and 79° 20' E, 45 km. north-east of Nagpur. It is approached by a short deviation on the main Nagpur-Jabalpur road and even from a distance the white-coated temples on the hill can be seen gleaming in the sun. Enclosed in the remains of an old Maratha fortress, the ancient temples of Ramtek are picturesquely situated on the top of a hill about 200 m. high. The little town of Ramtek, which lies at the foot of this hill, derives its name from the temple of Rama, *tek* meaning hill. Hallowed by tradition as a place of pilgrimage, Ramtek owes much of its significance to the rich lore connected with the origin of the temples. The legend goes that Rama stayed for some time at Ramtek on his way to Lanka.

There are a large number of lakes and tanks about Ramtek, one of which goes by the name of "Amba Talao." It has a large number of modern temples built around it, framed against the hills. Pilgrims and tourists begin their trek up the hill from the Amba tank, from where a flight of steps leads up to the temples at the opposite side and another flight descends to the town of Ramtek.

The temples on the hill are Ramtek's pride. In a more earthy way, Ramtek is celebrated for the cultivation of a special quality of "pan" which is exported to Bombay and Poona. In the vicinity are also some manganese mines of importance and 8 km. beyond, the picturesque Khinsi tank with a dak-bungalow overlooking it, is a favourite picnic spot.

R. J. D. Graham visited this area in the first week of September 1912 and made observations on the flora of Ramtek (*J. Bombay nat. Hist. Soc.* 22: 237-241, 1913). His main object in undertaking this tour was to compare the flora of transition formations with that of the Deccan trap. He collected about 216 plant specimens, which included dicots and monocots and ferns. But he did not include any member of the Cyperaceae and very few grasses and Eriocaulons, as the late rains delayed their flowering. Only grasses, which flowered early, were included. Graham states : " From a botanical point of view the Central Provinces (in which Ramtek was included previously—before the reorganization of states) form a particularly interesting area as they furnished the meeting place of the Bombay or western flora and the Bengal or eastern flora. Nagpur may particularly be taken as the eastern limit of the Deccan trap and with it the Deccan flora. Eastwards through Bhandara and Chattisgarh the Bengal flora commences."

During the last five years some new records of plants have been published based on the material collected from Ramtek. In 1963, Kapoor and others published " A note on the occurrence of *Rhynchospora longisetis* R. Br. (Family : Cyperaceae) in India with some interesting observations " (*J. Bombay nat. Hist. Soc.* 60 : 379-380). This note was based on the material collected by me during 1959 and deposited in the Herbarium, National Botanic Garden, Lucknow. The previous record of this plant was by Graham from Jubbulpore Farm, Jabalpur (Madhya Pradesh) which lies about 217 km. north-east of Ramtek. It will be worthwhile to mention here that Graham in his paper on the vegetation of Ramtek, based on the collection made in September 1912, does not report the occurrence of this interesting species in that area. Another taxon of Cyperaceae, a new record for India, is a plant collected from this area by Vinodini P. Donde (*Bull. Bot. Surv. India* 8: 358, 1966). During her floristic studies on the Cyperaceae of Nagpur and its neighbourhood she came across *Scirpus kernii* Raymond, which so far was thought to be restricted to Africa. The material was collected at Amba tank near Ramtek on October 2, 1962, and deposited in the Central National Herbarium, Calcutta. In 1966, the author published " Some Plant Records from the erstwhile Central Provinces and Berar " (*J. Bombay nat. Hist. Soc.* 62 : 455-462, 1966) and reported the following plants from Ramtek: *Nymphaea nouchali* Burm. f., *Ageratum conyzoides* Linn., *Tridax procumbens* Linn., *Vernonia cinerea* (Linn.) Less.; and *Hyptis suaveolens* Poit.

Since then there is no record of any published work on the plants of Ramtek.

## SOME ADDITIONAL NOTES ON THE FLORA OF RAMTEK

Since Graham explored this area in 1912, a large number of changes in the vegetation have taken place. Some species which were recorded from this locality are not to be found today even after an intensive search while a number of species not recorded in that list, are very common these days. The species which have appeared recently can be divided into the following heads.

(1) Those species which have appeared in ponds, lakes and rivers and marshy places. These may be classed as aquatic and semiaquatic plants. These include : *Nymphaea nouchali* Burm. f.; *Jussiaea repens* Linn.; *J. linifolia* Vahl; *Trapa natans* Linn. var. *bispinosa* (Roxb.) Makino, *Nymphoides cristatum* (Roxb.) O. Kuntze, *Ipomoea aquatica* Forsk.; *Utricularia flexuosa* Vahl, *Lindernia ciliata* (Colsm.) Pennell; *Veronica anagallis* Linn.; *Stemodia viscosa* Roxb.; *Sagittaria sagittifolia* Linn.; *Butomopsis lanceolata* Kunth, *Eriocaulon quinquangulare* Linn.; *Eleocharis atropurpurea* Kunth, *Cyperus iria* Linn.; *C. pumilus* Nees, *C. diffusus* Roxb.; *C. eleusinoides* Kunth, *C. flavidus* Retz.; *Scirpus supinus* Linn. etc.

(2) Those species which are found in the undergrowth in the forest, along roads, paths and in waste lands. These may be termed *Weeds*. A large number of weeds have spread in the forest and have become troublesome pests in recent years. Mention is made here of *Hyptis suaveolens* Poit. which is very common in the forests. This is an American plant and has spread in other states also. The following weeds are common these days at Ramtek : *Heliotropium ovalifolium* Forsk., *Indigofera glandulosa* Willd.; *I. trita* Linn. f.; *Phyllanthus maderaspatensis* Linn.; *Sida acuta* Burm. f.; *S. spinosa* Linn.; *Trichodesma indicum* R. Br., *T. zeylanicum* R. Br.; *Vernonia cinerea* Less.; *Ageratum conyzoides* Linn.; *Polycarpaea corymbosa* Lam.; *Corchorus fascicularis* Lam.; *Alysicarpus rugosus* DC.; *A. hamosus* Edgew.; *Smithia sensitiva* Ait., *Melothria maderaspatana* (Linn.) Cogn., *Goniocaulon glabrum* Cass.; *Rungia parviflora* Nees; *Justicia simplex* D. Don; *Boerhaavia diffusa* Linn.; *Aerva lanata* Juss.; *Euphorbia hirta* Linn. etc.

(3) *Planted trees* : Planting of trees along roadsides, in the fields, parks and near temples and mosques is an important source of introduced plants. In the past a large number of forests have been cut and burnt down. But recently there is a move to plant more and more trees and shrubs to beautify roads and parks. Trees of economic importance are cultivated in the fields and gardens and plantations are raised. Generally near towns and villages there are cultivated forests of " Babool " (*Acacia*



*nilotica* (L.) Del. ssp. *indica* Brenan) for firewood and for gum and tannin. This species is also an important source of fodder for goats. This species, it seems, was not introduced in Graham's time. Graham's list does not include the mango (*Mangifera indica* Linn.) and *Acacia farnesiana* Willd.; which is a native of tropical America. The above mentioned trees are commonly cultivated these days.

On scanning Graham's list, it becomes clear that this area has not been thoroughly surveyed. Some species have been overlooked and there are some recent additions. Some of the common shrubs and trees of economic importance such as 'Dikamali' (*Gardenia resinifera* Roth), 'Nirmali' (*Strychnos potatorum* Linn. f.), 'Tendu' (*Diospyros melanoxylon* Roxb.) have been left out in Graham's list.

It was found that the following families were not represented in Graham's list : 1. Nymphaeaceae, 2. Linaceae, 3. Loganiaceae, 4. Nyctaginaceae, 5. Alismaceae, 6. Eriocaulaceae, and 7. Cyperaceae. In the present paper more than a hundred species belonging to 35 families have been added to the flora of this region since Graham explored this area in 1912.

The author had an opportunity to survey the vegetation of Ramtek and make a collection of plants from this area during two tours, the first in the last week of January 1959 and the second in the middle of October same year. During these tours more than 400 plant specimens were collected. The following localities of Ramtek were visited : 1. Nagarjun hill forest, 2. Bank of the Sur River, 3. Lakes and ponds about the town, 4. Ramtek Forest Division, the hills near the temples, 5. Khinni tank, 6. Neighbourhood of the town, 7. Cultivated fields and waste lands.

In the present paper only those plants have been included which are not given in Graham's paper. All the specimens have been deposited in the Herbarium of the National Botanic Garden, Lucknow.

The plants have been arranged according to Bentham and Hooker's system of classification and every attempt has been made to adjust the nomenclature of plants according to the latest findings on the subject.

After a very short description of the plant, which is helpful in the identification of the plant in the field, the locality from which the plants were collected, is given. The numbers indicate the field book numbers attached to the specimens.

ADDITIONAL PLANTS<sup>1</sup>

## NYMPHAEACEAE

**Nymphaea nouchali** Burm. f. (*N. pubescens* Willd.)

Large aquatic herb with pink, bluish and pale yellow flowers. Loc.: Common in ditches and tanks about Ramtek (M.S.). (57544).

## CAPPARIDACEAE

**Capparis zeylanica** Linn.

A shrub scrambling or climbing by means of its recurved thorns, flowers pink. Common in hedges and thickets. (57507).

## MALVACEAE

**Hibiscus cannabinus** Linn.

A tall herb with pink flowers. Cultivated. Vern. Ambadi. (57502)

**H. lobatus** (Murr.) O. Ktze. (*Solandra lobata* Murr., *Hibiscus solandra* L'Herit.)

Herbaceous, erect; flowers white; quite common. Loc.: Nagarjun hill forest, Ramtek. (70714).

**Sida spinosa** Linn.

Herb with pale yellow flowers. (57511).

**Pavonia zeylanica** Cav.

Herb, not common. Loc.: Ramtek Forest Division. (57475).

## TILIACEAE

**Corchorus fascicularis** Lam.

Herb with yellow flowers. Common near ponds. (57484).

## LINACEAE

**Linum usitatissimum** Linn.

Herb with blue flowers. Cultivated. Vern. Jawas, Alsi. (57538).

## MALPIGHIACEAE

**Aspidopterys wallichii** Hook. f.

A woody climber with winged fruits. (57471).

<sup>1</sup> The numbers given in brackets represent herbarium specimens; unless the contrary is stated, the collectors are Balapure & Party.

## ANACARDIACEAE

**Mangifera indica** Linn.

Mango trec. Cultivated.

## PAPILIONACEAE

**Crotalaria albida** Heyne ex Roth

Herb with yellow flowers. Loc.: Ramtek Forest Division. (57473)

**Indigofera linifolia** Retz.

Herb with pink flowers. Common. (57500).

**I. trita** Linn. f.

Tall herb with reddish flowers. Common. (57485).

**I. glandulosa** Willd.

Herb with pods. Common. (57547, 57495).

**Alysicarpus rugosus** DC. var. **styracifolius** Baker

Herb with pinkish-yellow flowers. Common. (57509).

**A. hamosus** Edgew.

Prostrate herb on ground, flowers pinkish. Very common. Loc.: Nagarjun hill forest. *Balapure* 70705.

**Dolichos lablab** Linn.

Large climber with white flowers. Cultivated. (57504).

**Smithia sensitiva** Ait.

Herb with yellow flowers, very common in wet places. Loc.: Nagarjun hill forest. *Balapure* 70790.

**Phaseolus trilobus** Ait.

Climbing legume, cultivated. (57488).

**Desmodium diffusum** DC.

A legume with yellow flowers. (57491).

**Cicer arietinum** Linn.

Herb with bluish-violet flowers. Cultivated. Vern. Harbhara, Chana. (57549).

**Rhynchosia bracteata** Benth.

Herb, twining, not common. Loc.: Nagarjun hill forest. *Balapure* 70712.

**Sesbania bispinosa** (Jacq.) W. F. Wight. *S. aculeata* Pers.

Shrub in fruiting state, common near lake. (57501).

**Lathyrus sativus** Linn.

Cultivated. (57550).

**Clitoria ternatea** Linn.

A climber with blue flowers. Common on field hedges. *Balapure* 70811.

## CAESALPINIACEAE

**Bauhinia racemosa** Lamk.

A small crooked tree. Common. (57462).

**Acacia farnesiana** Willd.

A shrub with dark yellow flowers. (57537).

**A. nilotica** (L.) Del. ssp. *indica* Brenan (*A. arabica* Willd).

A small tree. Planted near the town.

**A. leucophloea** Willd.

A tree with yellowish bark. Vern. Hivar. (57467)

## TRAPACEAE

**Trapa natans** Linn. var. *bispinosa* (Roxb.). Makino.

Cultivated in ponds and lakes. (57530).

## ONAGRACEAE

**Jussiaea linifolia** Vahl.

Herb, common in dried ponds. Loc.: Ramtek Forest Division. (57454).

**J. repens** Linn.

An aquatic herb. (57531).

## CUCURBITACEAE

**Cucumis trigonus** Roxb.

A procumbent plant with yellow flowers. (57520).

**Melothria maderaspatana** (L.) Cogn.

Annual. Common. Loc.: Nagarjun hill forest. (70716)

RUBIACEAE

**Oldenlandia corymbosa** Linn.

Herb near marshy places. (57525).

COMPOSITAE

**Ageratum conyzoides** Linn.

Annual weed with pale blue flowers. (57494).

**Grangea maderaspatana** Poir.

A composite herb with yellow flowers. Common in wet places. (57513).

**Goniocaulon glabrum** Cass.

A composite tall herb with pinkish-violet flowers. Common in fields. (57510).

**Vernonia cinerea** Less.

Herb with pinkish-violet flowers. Common. (57451).

**Volutarella ramosa** (Roxb.) Santapau (*V. divaricata* Benth. & Hook.)

A composite herb. Common in cultivated fields. (57487).

PLUMBAGINACEAE

**Plumbago zeylanica** Linn.

Shrubby plant with white flowers. Calyx sticky. Rare. Loc.: On way to Sur River. (70801).

EBENACEAE

**Diospyros melanoxylon** Roxb.

A medium-sized tree. Common in forest. (57448), *Balapure* 70881.

APOCYNACEAE

**Ichnocarpus frutescens** Br.

A climber in fruiting state. Common. (57468).

**Wrightia tinctoria** R. Br.

A small tree in fruiting state, bark white. Most dominant tree. (57460).



## LOGANIACEAE

**Strychnos potatorum** Linn. f.

A small tree. Very common. *Balapure* 70894.

## GENTIANACEAE

**Nymphoides cristatum** (Roxb.) O. Kuntze (*Limnanthemum cristatum* Griseb.)

An aquatic floating herb with white flowers. Common. (57523).

**Nymphoides indicum** (L.) O. Kuntze (*Limnanthemum indicum* Griseb.)

An aquatic herb with white flowers. (57522).

**Exacum pedunculatum** Linn.

Herb with blue flowers, not common. (57486).

**Enicostemma littorale** Blume

Herb of medicinal importance. (57496), *Balapure* 70676.

## BORAGINACEAE

**Heliotropium ovalifolium** Forsk.

Herb with white flowers; common. (57512).

**Trichodesma zeylanicum** R. Br.

Herb with light violet flowers. Common in waste lands. (57508).

## CONVOLVULACEAE

**Ipomoea aquatica** Forsk.

A creeping herb, very common. (57521).

**I. hispida** (Vahl) R. & S.

A spreading herb, common. (57557).

## SCROPHULARIACEAE

**Lindernia ciliata** (Colsm.) Pennell (*Bonnaya brachiata* Link & Otto).

Herb with white flowers. Common. Loc.: Nagarjun hill. *Balapure* 70703, 70620.

**Veronica anagallis** Linn.

Herb with violet flowers, common near lake-water. (57519).

**Striga euphrasioides** Benth.

Herb with white flowers, common. Loc.: Nagarjun hill forest. *Balapure* 70709.

**Stemodia viscosa** Roxb.

Herb in dried pond, common. (57554).

LENTIBURACEAE

**Utricularia flexuosa** Vahl.

Aquatic herb with yellow flowers, common in pond. (57528).

ACANTHACEAE

**Hygrophila polysperma** T. Anders.

Herb with white flowers, common. (57517).

**Daedalacanthus purpurascens** T. Anders.

Herb with purple flowers, very common in the forest. Loc.: Nagarjun hill forest. *Balapure* 70708.

**Barleria cristata** Linn.

Herb, common. Loc.: Nagarjun hill forest. (57450), *Balapure* 70713.

**Justicia simplex** D. Don.

Herb with pinkish flowers, common. Loc.: Nagarjun hill forest. *Balapure* 70704.

**Rungia parviflora** Nees.

Herb, common. Loc.: Forest near Khinni tank. *Balapure* 70858.

LABIATAE

**Hyptis suaveolens** Poit.

A tall, rigid sweet-smelling herb with 4-angled rough haired stem. Flowers small and blue. Loc.: Ramtek Forest Division. (57479).

NYCTAGINACEAE

**Boerhaavia diffusa** Linn.

Herb, diffuse, common. Loc.: Nagarjun hill forest. *Balapure* 70738.

AMARANTHACEAE

**Amaranthus tricolor** Linn.

Herb, common. (57514).

**Aerva lanata** Juss.

Herb with small white flowers, common. Loc.: Nagarjun hill forest. *Balasure* 70735.

**Nothosaerva brachiata** Wight.

Herb with whitish flowers, common. Loc.: Ramtek Forest Division. (57480).

**Digera muricata** (Linn.) Mart.

Herb with pink flowers, common. (57555).

## POLYGONACEAE

**Polygonum hydropiper** Linn.

Herb with white flowers, common. Loc.: Nagarjun hill forest. *Balasure* 70710.

## EUPHORBIACEAE

**Euphorbia hirta** Linn.

Herb, common. Loc.: Ramtek Forest Division. (57449).

**E. perbracteata** Gage.

Herb, rare. (57552).

**Phyllanthus maderaspatensis** Linn.

Herb, common in waste lands. (57505, 57534).

**Tragia cannabina** Linn. f.

An evergreen climbing hispid herb with stinging bristles, variable in foliage. Rare. *Balasure* 70802, (57476).

## URTICACEAE

**Ficus tomentosa** Roxb.

Large shady tree. (57482).

## COMMELINACEAE

**Commelina hasskarlii** C.B.Cl.

Herb with blue flowers, common in fields. Loc.: On way to Sur River. *Balasure* 70785.

**Cyanotis axillaris** (Linn.) Schultz. f.

Herb. Loc.: Nagarjun hill forest. *Balasure* 70784.

ALISMACEAE

**Sagittaria sagittifolia** Linn.

An aquatic herb with white flowers, common. (57524).

**Butomopsis lanceolata** Kunth

A hydrophyte, common. (57463).

ERIOCAULACEAE

**Eriocaulon quinquangulare** Linn.

Herb with small white flowers in heads, quite common in moist places. Loc.: Nagarjun hill forest. *Balapure* 70631.

CYPERACEAE

**Bulbostylis barbata** Kunth

A slender herb, quite common. Loc.: Nagarjun hill forest. *Balapure* 70636.

**Eleocharis atropurpurea** Kunth

A sedge in water. (57466).

**Cyperus sanguinolentus** Vahl

Sedge, quite common. On way to Sur River. *Balapure* 70752.

**C. pumilus** Nees

Sedge, quite common in moist places. Loc.: Nagarjun hill forest. *Balapure* 70635, 70726.

**C. iria** Linn.

Sedge, quite common near ponds. Loc.: Nagarjun hill forest. *Balapure* 70640, 70737. On way to Sur River. *Balapure* 70754.

**C. diffusus** Roxb.

Sedge, common near lake. On way to Sur River. *Balapure* 70758.

**C. eleusinoides** Kunth

Sedge, common in moist places. Loc.: Nagarjun hill forest. *Balapure* 70711.

**C. flavidus** Retz.

Sedge, common near lake. On way to Sur River. *Balapure* 70757, 70633.



**Scirpus supinus** Linn.

Sedge in water. (57466).

**S. kernii** Raymond

Collected by V. P. Donde from Ramtek, near Amba tank on 2 Oct. 1962. This is a new record for India. D. 44 (CAL).

**Fimbristylis schoenoides** Vahl

Sedge, common. Loc.: Nagarjun hill forest. *Balapure* 70628.

**F. tetragona** R. Br.

Sedge, common. Loc.: Nagarjun hill forest. *Balapure* 70630.

**F. monostachya** Hassk.

Sedge. On way to Sur River. *Balapure* 70788.

**F. diphylla** Vahl

Sedge, quite common. Loc.: Nagarjun hill forest. *Balapure* 70637.

**Rhynchospora longisetis** R. Br.

Sedge, common in moist places. Loc.: Nagarjun hill forest. *Balapure* 70606.

## GRAMINEAE

**Aristida depressa** Retz.

Common, Ramtek Forest Division. (57446).

**Brachiaria eruciformis** Griseb.

Common. (57541).

**Elytrophorus spicatus** (Willd.) A. Camus

Near ponds. (57464).

**Eragrostis unioloides** Nees

Common. Loc.: Nagarjun hill forest. *Balapure* 70629.

**E. diarrhena** Steud.

Spikes, reddish; common in fields. (57548).

**E. gangetica** Steud.

Common near water. (57469).

**E. tenella R. & S.**

Common grass in waste lands and in cultivated fields. (57492).

**Ischaemum rugosum Salisb.**

Common. (57546).

**I. molle Hook. f.**

Common near drying ponds. (57489).

**Iseilema laxum Hack.**

Common in waste fields. (57490).

**Oryza sativa Linn.**

Commonly cultivated rice which is also the staple food here. (57526).

**Sorghum bicolor Moench.**

Ramtek near Nagpur. (57516).

**Themeda quadrivalvis O. Ktze.**

Common in waste lands. (57497).

**Rottboellia sp.**

An aquatic grass, common in lake. (57499).

**Dichanthium caricosum A. Camus**

**D. annulatum Stapf**

Common. *Balapure* 70678.

**Vetiveria zizanioides (Linn.) Nash**

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